

## Program on Information Resources Policy

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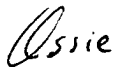
Dear Harold:

Attached is a proposed study plan "Arms Control Verification Policy Questions" by Major Bill Rowell, on loan to us from the US Air Force for this year.

Would you please comment, in your personal capacity, on his proposed study plan? Does the proposal address critical questions and policy issues? Your frank comments and suggestions will be greatly appreciated.

If at all possible, we would like to have your comments by mid-December.

Sincerely,



Oswald H. Ganley  
Executive Director

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STUDY PLAN

Arms Control Verification Policy Questions

William F. Rowell

November 1983

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## INTRODUCTION

Addressing Congress after signing the SALT II (Strategic Arms Limitation Talks) Treaty in June 1979, President Carter discussed the overriding need to avoid nuclear war:

In any age, such a rivalry risks degenerating into war, but our age is unique, for the terrible power of nuclear weapons has created an incentive for avoiding war that transcends even very deep differences of politics and philosophy. In the age of the hydrogen bomb, there is no longer any meaningful distinction between global war and global suicide.

In the same speech, President Carter also defended the verifiability of the unratified treaty:

As I have said many times, SALT II is not based on trust. Compliance will be assured by our own nation's means of verification, including extremely sophisticated satellites, powerful electronic systems and a vast intelligence network. Were the Soviet Union to take the enormous risk of trying to violate the treaty in any way that might affect the strategic balance, there is no doubt that we would discover it in time to respond fully and effectively.

In May 1982 shortly before entering negotiations with the Soviet Union on strategic nuclear arms President Reagan commented on the hard nuclear policy choices and outlined broad criteria for satisfactory arms control agreements with the Soviet Union:

I wish more than anything there were a simple policy that would eliminate the nuclear danger. But there are only difficult policy choices through which we can achieve a stable nuclear balance at the lowest possible level.

We must establish firm criteria for arms control in the 1980's. If we are to secure genuine and lasting restraint on Soviet military programs through arms control, we must seek agreements which are verifiable, equitable and militarily significant. Agreements that provide only the appearance of arms control breed dangerous illusions.

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Thus, to achieve meaningful arms control agreements in the 1980's with the Soviet Union, the President and other high level policymakers must be prepared to address an array of difficult policy questions. In particular, the complexity, pervasiveness, and sensitivity of verification policy questions make their treatment of utmost importance to the success of the arms control process and U.S. national security.

#### BACKGROUND

Despite the fact that arms control agreements date from ancient history, the inclusion of specific verification measures is a relatively recent phenomenon. It appears that prior to the advent of nuclear weapons that parties to an arms control agreement felt no particular need for additional guarantees of compliance. Because of the difficulty in making significant increases to a country's military potential without highly visible force changes that allow the other side adequate time to respond, there seemed to be little requirement for explicit assurance that each party could adequately verify the compliance of the other parties.

Through the 1950's U.S. attempts to reach agreements with the Soviet Union on control of nuclear weapons were unsuccessful. American concern over limited U.S. ability to verify Soviet compliance without extensive on-site inspection, which the Soviets repeatedly rejected, was the primary factor inhibiting the United States. President Eisenhower's "Open Skies" proposal of 1955 that the Soviet Union and the United States give each other military blueprints of each other's countries and that each

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open its country to aerial inspection reflected this pervasive U.S. concern. Ignoring the useful verification aspects of this proposal, the Soviets rejected it as "control without disarmament." Thus, as the 1950's closed, the barriers to obtaining adequate information on Soviet weapons programs posed by the secretive nature of the Soviet Union presented unacceptable risks to U.S. involvement in serious nuclear arms control negotiations.

Advances in information resources technology initiated during the mid-1950's sufficiently increased the level of U.S. confidence in its ability to monitor Soviet weapons programs to permit the U.S. to enter negotiations in the 1960's. U-2 reconnaissance flights over the Soviet Union from 1956 to 1962 proved an invaluable source of intelligence information. Starting in the early 1960's, information collected by U.S. reconnaissance satellites provided increasing confidence in U.S. monitoring capabilities. In fact, the existence of a U.S. "missile gap", an issue in the 1960 election campaign, was later convincingly refuted by intelligence gathered using this new information technology. During the 1960's with the increased monitoring confidence afforded by this technology the U.S. signed the Limited Test Ban Treaty (1963) prohibiting nuclear weapons testing in the atmosphere, outer space, and underwater and entered into the SALT process with the Soviets in 1969.

The 1972 U.S.-Soviet SALT I agreements (Anti-Ballistic Missile and Interim Agreement on Limitation of Strategic Offensive Weapons) firmly established the legitimacy of the use

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of national technical means (NTM) of verification to provide assurance of compliance with the provisions. Further each party agreed not to interfere with the NTM of the other party and not to use deliberate concealment that impedes verification by NTM. This agreement on the means of verification temporarily settled the question of the need for more intrusive measures, e.g., on-site inspection, and set a strong precedent for the comprehensive, follow-on negotiations. The question of the United States ability to "adequately" verify the SALT I agreements (part of President Nixon's instructions to the first U.S. delegation) was never seriously debated. The principal units of limitation of the Interim Agreement, land-based intercontinental ballistic missile (ICBM) launchers, submarine-launched ballistic missiles (SLBM), and ballistic missile submarines (SSBNs), possessed such large distinctive features that the U.S. had considerable confidence in its ability to monitor and verify Soviet compliance.

Signed in June 1979, SALT II placed an increased burden upon U.S. verification capabilities. In general, SALT II posed more difficult verification problems than SALT I in that SALT II attempted to limit qualitative aspects of strategic weapons (e.g., cruise missile range, "new" ICBM) as well as quantitative, and provided freedom to adjust the composition of strategic forces within certain limits. As in SALT I, verification by NTM was relied upon with similar provisions prohibiting deliberate concealment and impedance of verification.

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There was considerable public and Congressional debate over the verifiability of the SALT II agreement. Aside from the fundamental question of the overall "adequacy" of verification, more specific questions arose on the impact of the loss of Iranian monitoring sites on U.S. verification capability, the possibility of Soviet telemetry encryption impeding verification, and the difficulty of monitoring the 600-kilometer cruise missile range restriction, and the development of a new Soviet "light" ICBM. Senate verification concerns as evidenced by several proposed changes reflected a strong desire by Congress to be closely involved with verification of Soviet compliance through a variety of mechanisms including special verification reports and committees. Although perhaps not solely responsible for the Senate's failure to ratify SALT II, the intense Senate concern over the adequacy of verification emphasizes the crucial importance of verification in any future arms control agreement.

The direction of the current Intermediate Nuclear Forces (INF) and Strategic Arms Reduction Talks (START) negotiations likewise indicates an increasing reliance upon U.S. verification capabilities. The negotiators must deal with the difficult verification problem associated with mobile missiles (SS-20's, Ground Launched Cruise Missiles (GLCM), Pershing II's and mobile ICBMs). For a number of reasons -- small size, flexible deployment, dual capability, difficult to monitor development, testing, and deployment -- the cruise missile presents a distinctive challenge to existing verification schemes.



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In addition to complications arising from inclusion of less transparent weapons technology, U.S. desires for more "militarily significant" units of limitation for ballistic missiles raises new challenges. In the SALT II agreement ballistic missile units of limitation were launchers classified by their basing mode (land, sea, or air) and the number of warheads per missile (single or Multiple Independently-targetable Reentry Vehicle (MIRV)). For each missile the maximum number of warheads allowed to be tested or deployed was set using agreed counting rules. The U.S. START approach has focused on directly limiting both ballistic missile warheads, deployed and non-deployed missiles, and ballistic missile throw weight - all extremely difficult units to monitor relying on NTM alone. Accordingly, the U.S. has made it clear to the Soviet Union that some kind of cooperative measures beyond NTM, e.g., exchange of data, no encryption of telemetry data, on-site inspection, will be required to effectively verify any agreement.

#### QUESTIONS TO BE ADDRESSED

What are the major verification policy questions that the President and other senior policymakers need to address for the rest of this decade? My research will address the following questions:

QUESTION NO. 1: What are the verification implications of the on-going developments in both monitoring and weapons technology?

SUB-QUESTION 1A: How will developments in technology influence the effectiveness of potential arms control

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agreements--the units of limitation and types of verification provisions?

SUB-QUESTION 1B: What are the limitations of the various types of monitoring tools, national technical means, passive cooperative measures, active cooperative measures, in verifying treaty compliance?

QUESTION NO. 2: What is the proper role of verification in the process of negotiating an arms control agreement in this era of rapid technological change?

SUB-QUESTION 2A: What are alternative U.S. strategies for negotiating verification provisions of arms control agreements and their implications for a successful agreement?

SUB-QUESTION 2B: How can the U.S. handle the inherent informational advantage of the Soviet Union in verifying compliance of an open society versus the U.S. difficulty with the closed society of the Soviet Union?

SUB-QUESTION 2C: How can the requirements for effective verification measures be balanced with (1) the risk of compromise of U.S. intelligence sources, methods, and capabilities, (2) the risk of providing the Soviet Union with damaging information about U.S. military capabilities, and (3) the military significance of the agreement, i.e., the type of weapon systems included and the restrictiveness of their limitations.

QUESTION NO. 3: Throughout the arms control process what can the President do to gain and maintain the requisite confidence of Congress and the American public on the handling of critical verification issues?

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SUB-QUESTION 3A: How well are the Executive Branch agencies prepared to demonstrate to the public and Congress the operational verifiability of the proposed arms control agreement?

SUB-QUESTION 3B: How can the terms of the public/Congressional debate over the verifiability of the proposed treaty be framed to gain the necessary support for treaty ratification?

SUB-QUESTION 3C: To what extent can the U.S. risk compromise of intelligence sources, methods, and capabilities to gain public/Congressional confidence in U.S. capability to effectively verify the proposed arms control agreements?

SUB-QUESTION 3D: How closely can the Administration involve Congress in the arms control verification process? Specifically, what is Congress's role in the actual verification of compliance of the other parties to the provisions of the treaty?

#### METHODOLOGY

The intent of the study is to profile these and other important questions facing the President and other high level national policymakers. Drawing upon the thinking of sources both in and out of government, the aim is to distill a coherent framework for arms control verification policy questions and outline the major issues and views.

Source materials for the study includes surveys of the professional literature, Congressional testimony, and other reports. Also, personal interviews of present and past government policy makers and experts in the field will be

